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**Notes:**

1. Untranslatable words are replaced with asterisks. (\*\*\*\*).
2. Texts in the figures are not translated and shown as fig.

Translated: 06:47:47 JST 06/12/2006

Dictionary Last updated 05/30/2006 / Priority: 1. Information communication technology (ICT) / 2. Electronic engineering

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**CLAIM + DETAILED DESCRIPTION**

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**[Claim(s)]**

[Claim 1] Have the means of communications which connects between said network information processing systems with two or more network information processing systems, and [ each network information processing system ] The network information processing system characterized by being constituted including one or more information processors which have an alter operation function and process arbitrary information, and the information service management tool which offers the contents of electronic intelligence which process at least the information transmitted from said information processor, and include display information.

[Claim 2] The network information processing system according to claim 1 characterized by applying a wired system or radio system to said means of communications.

[Claim 3] The network information processing system according to claim 1 characterized by using a wireless LAN card for said means of communications.

[Claim 4] The network information processing system according to claim 1 characterized by making equivalent the installed number of said information service management tool in said both network information processing systems at least.

[Claim 5] The display device with which said information service management tool displays an image at least based on the information transmitted from said information processor, The network information processing system according to claim 1 characterized by having Data Processing Division support equipment which supports the electronic intelligence processing which contains said display device based on alter operation from said information processor.

[Claim 6] The network information processing system according to claim 1 characterized by carrying out simultaneous distribution of the image information of the same contents as the display device of both network information processing systems from the Data Processing Division support equipment of one of said network information processing system.

[Claim 7] One or more information processors which are the methods of building a network

information processing system, have an alter operation function, and process arbitrary information, The network information processing system constituted including the information service management tool which offers the contents of electronic intelligence which process at least the information transmitted from said information processor, and include display information is built at a specific field or a specific specific place. The network construction method characterized by connecting between said network information processing systems by means of communications.

[Claim 8] The network construction method according to claim 7 characterized by applying a wired system or radio system to said means of communications.

[Claim 9] The network construction method according to claim 7 characterized by using a wireless LAN card for said means of communications.

[Claim 10] The network construction method according to claim 7 characterized by making equivalent the installed number of said information service management tool in said both network information processing systems at least.

[Claim 11] The display device which displays an image on said information service management tool at least based on the information transmitted from said information processor, The network construction method according to claim 7 characterized by using the Data Processing Division support equipment which supports the electronic intelligence processing which contains said display device based on alter operation from said information processor.

[Claim 12] The network construction method according to claim 7 characterized by carrying out simultaneous distribution of the image information of the same contents as the display device of both network information processing systems from the Data Processing Division support equipment of one of said network information processing system.

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#### [Detailed Description of the Invention]

[0001]

[Field of the Invention] This invention is applied to a network conference system, a network education system, a network game system, etc., and relates to a suitable network information processing system and the network construction method.

[0002] Between the network information processing systems constituted including one or more information processors and an information service management tool is connected by means of communications in detail. It is based on alter operation from each information processor carried in in specific fields, such as a conference room and a classroom, or a specific place. While enabling it to transmit the contents of a screen of the display device in one network information processing system to the network information processing system of another side

like a "mirror" It enables it to announce data etc. smoothly and easily, without presentation TETA concerning a network information processing system being conscious of being dotted with the participant in a remote site.

[0003]

[Description of the Prior Art] From the former, the participant needed to be collected to one conference room holding a meeting. Moreover, although a conference is held while you had made it dotted, even if it used TV conference system etc., presentation data needed to be distributed, and presentation TETA needed to read out, or the display of OHP and a projector needed to be synchronized, and it needed to change to it by the manual.

[0004] In these days, the presentation data created using the personal computer (henceforth a personal computer) are carried into a conference room. The case where what is called teleconference form that a presenter (data presenter) announces it using electronic equipment to two or more meeting participants is taken has increased.

[0005] In this teleconference form, display equipment and a data presenter's notebook computer are connected. A data projector is used for this display equipment, and the presentation data created with the personal computer are displayed. One presenter's own notebook computer is connected to a data projector (only henceforth a projector) through a RGB cable, and it is made as [ project / on Shirakabe etc. / the screen currently displayed on the notebook computer ]. The presentation data currently displayed on Shirakabe etc. are made as [ point / by the mouse cursor which a presenter operates ]. That is, only the data which the explainer owns are displayed on Shirakabe.

[0006] The data projector corresponding to a network has appeared recently. The personal computer function is built in this projector. According to this, an explainer transmits a presentation file to a projector via a network from an own notebook computer (henceforth an information processor), and it is made as [ project / display the contents by the personal computer function of the projector, and ].

[0007]

[Problem to be solved by the invention] According to the teleconference form concerning conventional parallel, by the way, two or more notebook computers, When a projector, TV meeting equipment, etc. tend to be connected to the same network and it is going to build two or more network teleconferences (henceforth a network information processing system) etc., there are the following problems.

[0008] \*\* When performing two or more presentations using the projector of a stand, it is necessary to connect a projector and a notebook computer by a RGB cable. For this reason, it is necessary to prepare a notebook computer by the number of a projector. In this case, it is necessary to prepare a notebook computer, and cost becomes high or only the number of projectors serves as hindrance of improvement in the efficiency of employment.

[0009] \*\* although there are some which recent years come, and the projector of type corresponding to a network is also put on the market again, and can operate two or more projectors with one notebook computer The change of a projector needs to be required, or when displaying the same data, it is necessary to operate a part for the number of installation, and it becomes the hindrance of simplification of alter operation.

[0010] \*\* the case where two or more notebook computers tend to be connected and it is going to display the same presentation file on a network further -- one notebook computer -- for example, The application used for a presentation is started and how to transmit the same file as the screen of another notebook computer can be considered. However, when taking this method, whenever change is shown in a screen, you have to send image data. Therefore, a big load will be applied to a network.

[0011] Then, this invention solves such a conventional technical problem. It aims at offering the network information processing system and the network construction method which enabled it to announce data etc. smoothly and easily, without presentation TETA concerning a network information processing system being conscious of being dotted with the participant in a remote site.

[0012]

[Means for solving problem] The technical problem mentioned above is equipped with the means of communications which connects between network information processing systems with two or more network information processing systems. One or more information processors which each network information processing system has an alter operation function, and process arbitrary information, It is solved by the network information processing system characterized by being constituted including the information service management tool which offers the contents of electronic intelligence which process at least the information transmitted from an information processor, and include display information.

[0013] The information service management tool which has been arranged in a conference room, a classroom, etc. of both remote place, for example according to the network information processing system concerning this invention, Each information processor carried in a conference room and a classroom concerned is connected, a network information processing system is built and between this network information processing system is connected by means of communications. Based on the alter operation function of an information processor, arbitrary information is processed on the assumption that this. The contents of electronic intelligence which include display information based on the alter operation from this information processor are offered from an information service management tool.

[0014] Therefore, it is based on alter operation from each information processor carried in in specific fields, such as a conference room and a classroom, or a specific place. Since a remote display control which makes the contents of a screen of the display device in one

network information processing system transmit to the network information processing system of another side like a "mirror" can be performed The participant (presentation TETA) concerning a network information processing system can hold a data exhibition (presentation) etc., without being conscious of being dotted with the participant in a remote site.

[0015] One or more information processors which the network construction method concerning this invention is a method of building a network information processing system, have an alter operation function, and process arbitrary information, The network information processing system constituted including the information service management tool which offers the contents of electronic intelligence which process at least the information transmitted from an information processor, and include display information is built at a specific field or a specific specific place. It is characterized by connecting between network information processing systems by means of communications.

[0016] According to the network construction method concerning this invention, the network information processing system constituted including one or more information processors and an information service management tool is built at a specific field or a specific specific place, and it is made as [ connect / by means of communications / between network information processing systems ].

[0017] Therefore, it is based on alter operation from each information processor carried in in specific fields, such as a conference room and a classroom, or a specific place. Since a remote display control which makes the contents of a screen of the display device in one network information processing system transmit to the network information processing system of another side like a "mirror" can be performed The participant concerning a network information processing system can hold a data exhibition etc., without being conscious of being dotted with the participant in a remote site.

[0018]

[Mode for carrying out the invention] Then, the form of 1 operation of the network information processing system concerning this invention and the network construction method is explained, referring to Drawings.

[0019] (1) Embodiment drawing 1 is the block diagram showing the example of composition of the network information processing system 100 as an embodiment concerning this invention. Between the network information processing systems which consisted of this embodiment including one or more information processors and an information service management tool is connected by means of communications. It is based on alter operation from each information processor carried in in specific fields, such as a conference room and a classroom, or a specific place. While enabling it to transmit the contents of a screen of the display device in one network information processing system to the network information processing system of another side like a "mirror" It enables it to announce data etc. smoothly and easily, without

presentation TETA concerning a network information processing system being conscious of being dotted with the participant in a remote site.

[0020] The electronic equipment for two or more network configuration is the information processing system connected on the same network, and the network information processing system 100 shown in drawing 1 is constituted so that information can be processed by connecting two or more network information processing system #n ( $n=1-N$ ). The system 100 concerned is applied to a network conference system, a network education system, a network game system, etc., and is suitable.

[0021] While arranging the information service management tool 10 at specific places, such as a specific field or a conference room, in each network information processing system #n One or more information processors 1 are prepared in that conference room, this information service management tool 10 and each information processor 1 are connected by the means of communications 4, and it is made to carry out remote control of the information service management tool 10 based on operator guidance from these information processors 1.

[0022] Thus, it connects by other network information processing system #n+1 grades and means of communications 40, and constituted network information processing system #n is made as [ carry out / the local side / remote network computation ]. In carrying out network information processing, in the information service management tool 10 in each network information processing system #n, the identification information packets for identifying the electronic equipment for network configuration are distributed all at once. Teleconference equipment, an information listing device, etc. are contained in electronic equipment.

[0023] In this system 100, it is the case where grouping of the electronic equipment is carried out to every network information processing system #n, and is made as [ distribute / group identification information / for every network information processing system / from the information service management tool 10 / to the information processor 1 / all at once ]. In each information processor 1 which received this, while listing and displaying group identification information, it is made as [ choose / the electronic equipment containing the information service management tool 10 and other information processors 1 belonging to other network information processing system #n+1 grades ].

[0024] The group identification information at this time is made as [ register / with Data Processing Division support equipment 3 / at each network information processing system #n of every ]. Group identification information is a name which was related with the name which shows an abbreviated-name name, and/or the specific field and specific place for example, about network information processing and which is easy to identify, and is related with the name which does not overlap on the network in other same SEGMENTO. If it does in this way, a participant can identify Data Processing Division of the purpose easily.

[0025] An extension is beforehand added to group identification information, extended group

identification information is defined, and it is made as [ identify / the electronic equipment connected on the network based on extended group identification information ]. Even when are done in this way and two or more electronic equipment with the same group identification information exists, a notebook computer name can be performed simultaneously with a setup of group identification information so that it may not overlap on the network in the same SEGMENTO.

[0026] It is the case where group identification information is set as the electronic equipment for network configuration by this system 100. When the identification information packet by which simultaneous distribution was respectively carried out from Data Processing Division support equipment 3 in electronic equipment has been recognized It collates whether it is in agreement with the group identification information set as the electronic equipment concerned, only when this group identification information is in agreement, existence of a self-opportunity and electronic equipment information are notified to Data Processing Division support equipment 3, and it is made as [ register / into Data Processing Division support equipment 3 / the group identification information on the electronic equipment concerned ].

[0027] The information processor 1 has a graphic user interface (henceforth a GUI function) used as an example of an alter operation function, and is made as [ process / using this GUI function and a mouse operation function / arbitrary information ]. It carries to the information processor 1 and a useful note type personal computer (henceforth a notebook computer) is used. When participating in a teleconference etc., application for exclusive use is installed in a notebook computer. In the information service management tool 10, it is made as [ offer / the contents of electronic intelligence which process at least the information transmitted from this information processor 1, and include display information ].

[0028] This information service management tool 10 and each information processor 1 are used connecting by the means of communications 4. It is made as [ carry out / using the alter operation function of the information processor 1 / remote control of the information service management tool 10 ]. The information service management tool 10 has the display device 2 and Data Processing Division support equipment 3.

[0029] Data Processing Division support equipment 3 is equipment which takes the lead in the network information processing which exists in the accessible range first with the information processor 1. With Data Processing Division support equipment 3, it is made as [ support / the electronic intelligence processing which contains the display device 2 based on remote-operation directions from the information processor 1 ]. Data Processing Division support equipment 3 has a personal computer function, and is made as [ process / by the alter operation function of the information processor 1 / information ].

[0030] In the display device 2, an image is displayed based on the information acquired from the information processor 1. In this system 100, it is made as [ display / about selection of the

electronic equipment for network configuration other than Data Processing Division support equipment 3 / all the electronic equipment of the part which chose group identification information in the information processor 1 ]. A projector, a flat-panel display, etc. are used for the display device 2. A projector is made as [ project / based on an RGB code / on Shirakabe etc. / an image in color ]. The plasma display in which the formation of a display big screen is possible is used for a flat-panel display.

[0031] When the means of communications 4 is constituted from this system 100 by preparing a wireless communication function in Data Processing Division support equipment 3, and preparing a wireless communication function also in each of the information processor 1, The case where the means of communications 4 is constituted, and the case where the means of communications 4 is constituted using the usual telecommunication cable are assumed by forming the radio equipment as an access point. Of course, you may constitute a network combining these.

[0032] A wireless LAN card is used for a wireless communication function. It is Peer [ in the field of specification when a wireless LAN card is used, or a specific place ]. to Data Processing Division support equipment 3 and each information processor 1 can be tied by Peer mode. An access point becomes unnecessary.

[0033] The IP address used as an example of solid-state identification information is assigned to each of the information processor 1 by this system 100, and Data Processing Division support equipment 3 is made as [ carry out / based on an IP address / supervisory control of each information processor 1 ]. It is for recognizing the information processors 1, such as a meeting participant, with the electronic equipment for network configuration connected to the same network. consumption of a global address is lessened -- things can be carried out.

[0034] The security information used as an example of the operation restricted information which can be called off using specific key information is set to each of the information processor 1 by this system 100. Since the Data Processing Division support equipment 3 concerned cannot be operated unless security information is called off even if it is going to access the Data Processing Division support equipment 3 in the conference room concerned with the information processor 1 of other rooms if it does in this way, access from a person unrelated to the meeting etc. can be prevented. That is, a radio interception becomes impossible unless security information is called off. Disclosure in the meeting which prevents a secret with this security system can be prevented.

[0035] Then, the example of Data Processing Division in the network information processing system 100 is explained. Drawing 2 is a flow chart which shows the example of Data Processing Division in the network information processing system 100.

[0036] It is premised on the case where connect the electronic equipment for two or more network configuration on the same network, and information is processed, in this embodiment.



This is made into a processing condition and the network information processing system #1 concerned consists of Step A1 of a flow chart shown in drawing 2 . For example, the information service management tool 10 is arranged at specific places, such as a specific field or a conference room, and a classroom, at Step A11. In a specific field, a residential area and the unit field of all prefectures and division cities, towns and villages are included. It is for building a home teleconference, a home education system, a national teleconference, etc. [0037] And it shifts to Step A12 and one or more information processors 1 are prepared in this conference room. It is for submitting presentation data etc. to a teleconference, an electronic classroom system, etc., and explaining the data in the system 100 concerned. [0038] Then, it shifts to Step A13 and the information service management tool 10 and each information processor 1 are connected by the means of communications 4. For example, when building system #1 to a conference room etc., the information service management tool 10 and each information processor 1 are connected with a wireless LAN card etc. [0039] And it shifts to Step A2 and between systems is connected by the means of communications 40. Then, in carrying out network information processing, the information service management tool 10 is made by step A3 as [ distribute / the identification information packets for identifying the electronic equipment for network configuration / all at once ]. At this time, with the information processor 1, while displaying identification information, it is made as [ choose / the electronic equipment containing the information service management tool 3 and other information processors 1 ]. [0040] Therefore, in each information processor 1, automatic recognition of two or more electronic equipment connected on the network can be carried out. Thereby, in the participant concerning network information processing, it can participate now easily [ the meeting which he means ], and the participant can intervene now in predetermined information processing system smoothly. [0041] Moreover, the electronic equipment which belongs in the same group based on group identification information in the information service management tool 10 in each network information processing system #n by identifying [ the participant side ] It can use without being conscious of whether it is a thing related to the Data Processing Division to which which network device corresponds. [0042] Therefore, when a participant tries to participate in Data Processing Division, he can only choose what is meant from the list of Data Processing Division groups, and can participate easily [ predetermined Data Processing Division ]. In addition, only by setting group identification information as electronic equipment, since the equipment information of an IP address is registered automatically, equipments can be installed very easily. [0043] (2) The 1st work-example drawing 3 is the block diagram showing the example of composition of the teleconference 101 network type [ as the 1st work example concerning this

invention ]. [ with two or more electronic equipment of network information processing system #1 and everything but the 1st which had the network constituted from this work example by two or more electronic equipment ] Network information processing system #of \*\* 2nd which had network constituted 2 are connected, the network type teleconference 101 is built, and it is made to process information between two systems.

[0044] The network type teleconference (e-products) 101 shown in drawing 3 is an example of a network information processing system. The meeting group of conference room Room.No323 as network information processing system (it is only called network system) #of \*\* 1st 1, Two of the meeting groups of conference room Room.No101 as network information processing system (it is only called network system) #of \*\* 2nd 2 exist.

[0045] With the Lord / vice-communicators 3A-3D (information service management equipment) with which each meeting group serves as a core of a meeting fundamentally and which become an example of the electronic equipment for network configuration It consists of notebook computers (information processor) PCi which a meeting participant operates, the projector 2A for a presentation data display is connected to the main communicator 3A, and projector 2B is similarly connected to the main communicator 3B. Projector 2C is connected to the vice-communicator 3C, and Projector 2D is connected to the vice-communicator 3D.

[0046] The combination of a communicator and a projector comes to constitute information service management equipment (presentation equipment) from this example. The creator 5 and TV meeting equipment 7 used as an example of the electronic equipment for network configuration may be contained in presentation equipment.

[0047] this teleconference 101 -- a wireless LAN card -- the systems of one meeting group including controllable TV meeting equipment 7 and a controllable creator 5 are constituted. The communicators 3A-3D of each meeting group, TV meeting equipment 7, and a creator 5 are connected by the means of communications 40 through the line concentration connector (HUB) 9. Moreover, the electronic equipment of the meeting group of No323 and the electronic equipment of conference room Room.No101 are connected through the means of communications 40.

[0048] Drawing 4 is the block diagram showing the example of composition of network system #1. One information-processing-system #1 Nine line concentration connectors (HUB) 9A-9E, It consists of three notebook computers PCi (i= 1-3), two sets of the projectors 2A and 2C for a data display, and the Lord / vice-communicators 3A and 3C, TV meeting equipment 7 with one set of a wireless LAN function, a creator 5, and an access point 6 for wireless LAN (bridge).

[0049] Projector 2A is connected to Communicator 3A, Projector 2C is respectively connected to Communicator 3C, and an image is displayed based on the information acquired from a notebook computer PCi. For example, in Projector 2A, based on an RGB code, an image in color is projected on Shirakabe etc., and it is made as [ display / presentation data etc. ].

[0050] It connects with the means of communications 40 through HUB9C, and the main communicator 3A is equipment which takes the lead in the network information processing which exists in the accessible range first with a notebook computer PCi. In the main communicator 3A, it is made as [ support / the electronic intelligence processing which contains Projector 2A based on remote-operation directions from a notebook computer PCi ].

[0051] The main communicator 3A has a personal computer function, and is made as [ process / by the alter operation function of a notebook computer PCi / information ]. Each meeting participant is managed or it is made as [ offer / the contents of electronic intelligence which process at least the information transmitted from a notebook computer PCi, and include display information ].

[0052] Moreover, in carrying out network information processing, in the main communicator 3A, the identification information packets for identifying the electronic equipment for network configuration are distributed all at once. For example, it is the case where grouping of the electronic equipment for network configuration is carried out at the time of a system startup, and is made as [ distribute / group identification information / to these electronic equipment containing a notebook computer PCi / all at once ].

[0053] The main communicator 3A specifically does simultaneous distribution of the identification information packet which shows existence of the main communicator 3A to each device of the same SEGMENTO on a network. Equipment information, extended group identification (index, IP address, etc. which show main communicator 3A) information, etc. on main communicator 3A itself are included in this packet. In this example, group identification information is "192.168.0. xxx", and the main communicator's 3A IP address is "192.168.0.1."

[0054] The information on the device installed in a conference room fixed, including teleconference equipment 7 or a creator 5, is made as [ define / to which group each device belongs / registering with the main communicator's 3A setup information directly / clearly ]. The IP address of teleconference equipment 7 is "192.168.0.20." It connects with the means of communications 40 through HUB9D, and the contents of the meeting are edited or a creator 5 is made as [ record / the contents ]. The IP address of a creator 5 is "192.168.0.10."

[0055] The group identification information at this time is set up by the user. Group identification information is made as [ register / with Communicator 3A etc. / for every network system #2 / #]. Group identification information is names which are easy to identify, such as for example, a conference room name, an abbreviated name, and a name, and is related with the name which does not overlap on the network in other same SEGMENTO. If it does in this way, a participant can identify Data Processing Division of the purpose easily. For example, group identification information is a conference room "Room336", a conference room "NBS-SL1", etc.

[0056] The extension extended with the format specified beforehand is added, and extended

group identification information is defined by this group identification information. It is made as [ identify / the electronic equipment connected on the network based on this extended group identification information ]. Even when are done in this way and two or more electronic equipment with the same group identification information exists, a notebook computer name can be performed simultaneously with a setup of group identification information so that it may not overlap on the network in the same SEGMENTO.

[0057] For example, in the case of a conference room "Room336", as for the main communicator 3A, "Room336-M1" turns into "NBS-SL1-M1" and "NBS-SL1-S1", and, in the case of "Room336-S1" and a conference room "NBS-SL1", the vice-communicator 3C becomes.

[0058] In addition, the vice-communicator 3C is connected to the means of communications 40 through HUB9E. It is a device for future expansion that the vice-communicator 3C makes the main communicator 3A collaborate with assistance or it etc. The vice-communicator's 3C IP address is "192.168.0.2." The vice-communicator 3C can register with the main communicator 3A side automatically by making the main communicator 3A recognize existence of a self-opportunity about what can assign group identification information to itself like a teleconference.

[0059] TV meeting equipment 7 is connected to the means of communications 40 through HUB9A. It is the case where group identification information is set by this system 101 to the electronic equipment for network configuration, for example, teleconference equipment 7 grade. When the identification information packet in which simultaneous distribution was done by the main communicator 3A in teleconference equipment 7 has been recognized it is collated whether it is in agreement with the group identification information set as the teleconference equipment 7 concerned. Only when this group identification information is in agreement, the main communicator 3A is notified of existence of a self-opportunity and electronic equipment information, and it is made as [ register / into the main communicator 3A / the group identification information on the teleconference equipment 7 concerned ].

[0060] An IP address is assigned to each of a notebook computer PCi by this system 101, and it is made in the main communicator 3A as [ carry out / based on an IP address / supervisory control of each notebook computer PCi ]. It is for recognizing the notebook computers PCi, such as a meeting participant, with the electronic equipment for network configuration connected to the same network.

[0061] Moreover, a meeting participant (henceforth a client) is made as [ communicate / using the notebook computer (henceforth Client PCi) equipped with the wireless LAN function / with each device / via an access point 6 ]. The notebook computer PCi has a GUI function and is made as [ process / using this GUI function and a mouse operation function / arbitrary information ]. When participating in a teleconference etc., application for exclusive use is

installed in a notebook computer PCi.

[0062] In this example, only group identification information is started and displayed in a list among extended group identification information in the notebook computer PCi of each client from the identification information packet distributed with two or more communicators 3A and 3B etc. at the time of program starting. With this, the participant side is made as [ choose / from the inside / the electronic equipment containing Communicator 3A, other notebook computers PCi, etc. belonging to the group identification information corresponding to the Data Processing Division made into the purpose, for example, other network system #2 grades, ].

[0063] In addition, the IP address of notebook computer PC1 is "192.168.0.101", the IP address of notebook computer PC2 is "192.168.0.102", and the IP address of notebook computer PC3 is "192.168.0.103." An access point 6 is made as [ carry out / connect with the means of communications 40 through HUB9B, connect the main communicator 3A and each notebook computer PCi, and / communications processing ]. The IP address of an access point 6 is "192.168.0.25."

[0064] In this system 101, it is made as [ display / about selection of the electronic equipment for network configuration other than main communicator 3A / all the electronic equipment of the part which chose group identification information in the notebook computer PCi ].

[0065] In Client PC, it is made as [ require / of the main communicator 3A corresponding to the selected group identification information / meeting participation ]. The main communicator 3A demands a setup of the password for meeting participation now at the time of login, when nobody has a participant, and he is made as [ permit / by the input of a password / participation ]. Moreover, when someone has already participated in the teleconference 101, the password is checked, and it is made as [ permit / only when in agreement with the password managed with the main communicator 3A / the participant's meeting participation ].

[0066] [ packet / in which simultaneous distribution has been done by two or more main communicators 3A / identification information ] in fact When in agreement with the group identification information registered into the self-opportunity itself with reference to group identification information, packet transfer of the IP address of a self-opportunity is carried out to the main communicator 3A of the delivery origin, and the kind of device, an IP address, etc. notify him of it.

[0067] In the main communicator 3A, it registers as a device of its group in response to the notice of this packet. Thus, only by setting up group identification information, since the equipment information of Data Processing Division called an IP address can be made to set up automatically, a user can save the time and effort which carries out a manual setup on the main communicator 3A.

[0068] The security information which can be called off using specific key information is set to each of a notebook computer PCi by this system 101. Even if it is going to access the main

communicator 3A and the vice-communicator 3C in the conference room concerned with the notebook computer PCi of other rooms if it does in this way Since the main communicator 3A etc. cannot be operated unless security information is called off, access from a person unrelated to the meeting etc. can be prevented. Disclosure in the meeting which prevents a secret with this security system can be prevented.

[0069] Then, a communicator's 3 example of an internal configuration is explained. Drawing 5 is the block diagram showing examples of an internal configuration, such as Communicator 3A. The communicator 3A which shows drawing 5 has a personal computer function, and processes information by the mouse operation of a notebook computer PCi. Communicator 3A has a data bus 36, and a display adapter 31, CPU32, RAM33 for works, data storage equipment 34, and net adapter 35 grade are connected to this data bus 36.

[0070] A display adapter 31 processes the data for presentations, and it has the function which creates an RGB code. The RGB code based on the data for these presentations is outputted to a projector 2. RAM33 for works are made as [ store / temporarily / the transfer information concerning the data for a private IP address or presentations ].

[0071] Data storage equipment 34 consists of a hard disk (HDD) which is not illustrated, and ROM and RAM. It is made as [ store / in a hard disk / the data for presentations ]. The control program (henceforth a system support control program) for supporting a teleconference is described by ROM. The system support control program consists of programs which process basic software and presentation data for operating CPU32.

[0072] By the net adapter 35, it is made as [ perform / from a notebook computer PCi / \*\*\*\*\* of presentation data or various commands ]. CPU32 are made as [ control / based on a system support control program / I/O of a display adapter 31, RAM33 for works, data storage equipment 34, and net adapter 35 grade ]. It is for processing various programs.

[0073] Drawing 6 is the image figure showing the display example of the GUI operation screen P0 at the time of starting in a notebook computer PCi (henceforth a screen at the time of GUI starting). At the time of GUI starting shown in drawing 6, Screen P0 is displayed on notebook computer PC1 at the time of starting, and is a display example based on a client GUI program. On Screen P0, 2 split display methods are taken at the time of GUI starting. The GUI operation screen (henceforth a control screen) P1 is displayed on the left-hand side of Screen P0, and the ATENDI screen P2 is displayed on screen right-hand side. In this example, the selection picture by screen snap mode is displayed on the control screen P1.

[0074] In the control screen P1, the area 21 for device icons is formed in the center, and icons, such as a projector, are displayed. "start" at the time of screen snap mode and the "stop" button K0 are displayed on the upper part of this area 21. The ATENDI button K1 is displayed on that right-hand, the "HELP" button K2 is displayed on that upper part, and the "closed" button K3 is displayed on the outer frame upper part of this control screen P1. It is made as

[ display / down the area 21, the tab K4 file Explorer / for "histories" is displayed, and / in this tab K4 / the file list area 22 ]. In addition, it is made as [ display / on the left-hand side upper part of the control screen P1 / the logo mark 19 of a corporate image ].

[0075] In the ATENDI screen P2, the area 23 for ATENDI user lists is formed in the center, and a meeting participant, the IP address of the notebook computer PCi, etc. are displayed with an icon. The YUZAZU information area 24 is established in the upper part of this area 23, and it is made as [ display / by the local side / the IP address of the specific notebook computer PCi etc. ]. The "chat" button K5 is displayed on the right-hand side upper part of the ATENDI screen P2. Moreover, it is made as [ display / down the ATENDI screen P2 / the local button K6, the remote button K7, and clear button K8 grade ].

[0076] Drawing 7 is the image figure showing the display example of the login screen P3 in a notebook computer PCi. After the login screen P3 shown in drawing 7 starts the teleconference 101 concerned, it is displayed.

[0077] On the login screen P3, it is made as [ enter / the conference room and password with which he participates ]. The user input area 25 is established in the login screen P3, and "Room Name" for inputting a conference room number and "password" for entering a password are prepared for the user input area 25. Down the window including this user input area 25, the "O.K." button K9 and the "CANCEL" button K10 are prepared.

[0078] A password attests participation of a meeting, is entered with a half-width alphanumeric character or a sign, and can be used to 16 characters at the maximum. In the teleconference 101 concerned, when participating in a meeting first (it logs in first), it is made as [ set / the first meeting participant / a password ].

[0079] A meeting participant inputs a conference room number into a "Room Name" area, and enters a password after that. For example, cursor is united with the area of "password" and a password is entered. The first participant enters a password twice. The 2nd password is made as [ input / into "confirm new password" ]. It is for the check of a password.

[0080] It is made as [ enter / when other participants other than the first participant participate in a meeting / (when it logs in to 2nd henceforth) / the password which the first participant set up ]. The input of a password is good at once. Then, a setup is completed by clicking "O.K."

[0081] Then, the example of transmitting and receiving processing of the group identification information in the network type teleconference 101 is explained. It is premised on the case where connect the electronic equipment for two or more network configuration on the same network, and a network type teleconference is built, in this work example. In addition, the case of a conference room "Room336" (network system #1) is explained. Moreover, main communicator 3AA assumes the case where the following identification information packets are broadcast at intervals of 5 seconds, in order to register a connection device.

[0082]

Offset Size Contents of electronic intelligence +0 2 Data size 0x0018 (being a fixed packet 24 byte)

+ 2 2 Status +4 4 IP address (the main communicator's IP address)

+ 8 16 Group identification information (the main communicator's extended group identification information)

A "teleconference" is described by the status by bitwise.

[0083]

0x0001 Communicator (main)

0x0002 Communicator (secondary -- 1)

0x0004 Communicator (secondary -- 2)

0x0008 Teleconference equipment 0x0010 Creator [0084] Moreover, by the electronic equipment for network configuration, when the main communicator's 3A broadcasting is detected, the following processings are performed by the notebook computer PCi. First, group identification information is started from extended group identification information, and it is confirmed whether be the same group identification information "192.168.0. xxx" as a self-opportunity. It is made as [ answer / only when in agreement with the group identification information "192.168.0. xxx" registered into the self-opportunity / the main communicator 3A ] (reaction).

[0085] In this teleconference 101, in order to show the main communicator 3A existence of a self-opportunity, it is made as [ transmit / the following identification information packets ].

Offset Size Contents of electronic intelligence +0 2 Data size 0x0018 (being a fixed packet 24 byte)

+ 2 2 Identification information +4 4 IP address (IP address of a self-opportunity itself)

+ 8 16 Group identification information (extended group identification information of a teleconference)

The group identification information on the electronic equipment for the following network configuration is described by above-mentioned identification information. The contents of electronic intelligence are 0x0001. Communicator (main)

0x0002 Communicator (secondary -- 1)

0x0004 Communicator (secondary -- 2)

0x0008 Teleconference equipment 0x0010 It is a creator.

[0086] In the main communicator 3A which received such an information discernment packet, the electronic equipment is registered as electronic equipment of the concerned network type teleconference 101, and the processing according to each device is started. It can check now that the connection partner point has ended communication by communicating periodically or preparing the time-out to Data Processing Division to the electronic equipment for each network configuration.



[0087] Moreover, by the electronic equipment for network configuration, after answering the main communicator 3A broadcasting, it is made as [ check / whether waiting and the main communicator 3A have recognized the self-opportunity only for a maximum of 10 seconds (2 broadcasting) ]. It is for checking the status under broadcasting. When the status under broadcasting does not change, it is again made as [ send / an identification information packet ].

[0088] Thus, [ according to the teleconference 101 network type / as the 1st work example concerning this invention ] In the case of a conference room "Room336", with the main communicator 3A It is premised on three notebook computers PC1-PC3 prepared for the conference room concerned being connected by the access point 6. In registering a connection device, the main communicator 3A is made as [ distribute / the identification information packets for identifying the electronic equipment for network configuration containing notebook computer PC1 - PC3 grade / all at once ].

[0089] Therefore, in each notebook computer PC1 - PC3 grade, while displaying identification information, it is made as [ choose / the electronic equipment containing the main communicator 3A and other notebook computers PCi ]. Thereby with each notebook computers PCi, such as a conference room "Room336", automatic recognition of two or more electronic equipment connected on the network can be carried out. Therefore, in the participant concerning network information processing, it can participate now easily [ the meeting held in the conference room "Room336" which he means ], and the participant can intervene now in predetermined information processing system smoothly.

[0090] (3) The 2nd work-example drawing 8 is the block diagram showing the example of composition of the teleconference 102 network type [ as the 2nd work example concerning this invention ]. Drawing 9 is the block diagram showing the example of composition of teleconference 102'. In this work example, two network system #1 and #2 are connected by the means of communications 40, and User Information is mutually exchanged among these network information processing systems. Compared with the 1st work example, the vice-communicators 3C and 3D and an access point 6 are omitted on a system configuration.

[0091] Network system #1 consists of electronic equipment for the network configuration of the meeting group of for example, a Room.No No. 323 room in the network type teleconference 102 shown in drawing 8 . It is the system which network system #2 consist of electronic equipment for the network configuration of the meeting group of a Room.No No. 101 room, connects this two system #1 and #2 on the same network, and processes information.

[0092] At the Room.No No. 323 room (system #1), Communicator 3A and teleconference equipment 7 are respectively connected to the means of communications 40 through HUB9. Projector 2A is connected to Communicator 3A. Three notebook computers PCi (i= 1-3) are prepared for system #1.

[0093] At the Room.No No. 101 room (system #2), Communicator 3B and teleconference equipment 7 are respectively connected to the means of communications 40 through HUB9. Projector 2B is connected to Communicator 3B. Three notebook computers PCi (i= 1-3) are also prepared for system #2. In addition, since the thing of the same name as the 1st work example and the same sign has the same function, it omits the explanation.

[0094] Here, the case where User Information of notebook computer PC1 belonging to a Room.No No. 323 room is transmitted and displayed on notebook computer PC2 belonging to a Room.No No. 101 room is considered.

[0095] Between the communicator 3A with a global address (43.2.57.11), and the communicator 3B with a global address (43.0.21.121) in teleconference 102' shown in drawing 9 The case where direct communication tries to be taken with the participant in the local side and a remote-side participant is assumed.

[0096] in this case, private -- another [ via a global network ] from the network of IP (192.168.0.xxx) -- private -- the network of IP will be accessed. Since the TCP/IP network spread widely now, in the present IP version 4 using the address value which is 32 bits, it is impossible to assign a unique IP address to all the nodes in the world like a conventional system.

[0097] Then, a NAT (Network Address Translation) function is used. The private IP address is assigned to each node of a certain in-house section, and only when accessing external Ethernet from the organization, how to perform a transfer and chat of a file can be considered by assigning an original IP address. in this case, the path to a remote side [ side / local ] is global -- private from IP -- it becomes conversion to IP.

[0098] However, since it is made as [ identify / the dispatch origin described by the packet header / only the IP address of the destination ] according to the NAT function, the correspondence of a private address and a global address must always be 1 to 1. For this reason, the node which can access outside using one global address will be restricted only to one at a certain time.

[0099] on the other hand, [ communication / which uses different ports by managing the correspondence relation between a local address and a global address for every communication port of TCP/UDP ] now The IP masquerade with which two or more local nodes enable it to communicate simultaneously in one global address is used. However, control becomes complicated.

[0100] So, in the teleconference 102 concerned, it is made as [ exchange / User Information / between network information processing systems / with Communicators 3A and 3B / mutually ]. For example, in drawing 8 , the meeting group of the side in which he has participated is carried out the local side, and the meeting group of the connection partner point is defined as a remote side. A remote side is connected by the means of communications 40 the local side. The presentation data by the side of a local can be displayed on remote-side

projector 2B here. In this case, the file of the data for presentations follows the following paths.

[0101] The communicator 3B of a communicator 3A-> remote side of the notebook computer PC1 -> local side by the side of a local -> Remote-side projector 2B, And it is made as [ result / in the projector 2A by the side of the communicator 3A-> local by the side of the notebook computer PC1 -> local by the side of a local ].

[0102] the participant in the local side is private here -- the chat and file transfer between participants are considered by the case where IP is being used. The participant in a local group assumes that communication with Communicators 3A and 3B is performed by SEGMENTO of "192.168.0. xxx", for example.

[0103] The communicator 3A of the local side has managed the information of all the meeting participants in the local side, including a name, an IP address, etc. For this reason, the notebook computer PCi (192.168.0. aaa) by the side of the communicator 3A-> local by the side of a local PC1 -> local, (-- 192.168.0. -- mmm) -- (-- 192.168.0. -- communication between participants is attained in the path bbb) (within the same SEGMENTO).

[0104] In this teleconference 102, the communicator 3A of the local side manages the IP address of the following participant information PCi, i.e., a participant's notebook computer, as User Information. As the participant information, <A User name> <IP address>Local1 192.168.0.101Local2 192.168.0.102Local3 It is made as [ manage / 192.168.0.103 ]. Similarly the remote-side communicator 3B manages the IP address of the following participant information PCi, i.e., a participant's notebook computer, as User Information. As the participant information, <A User name> <IP address>Remote1 192.168.0.101Remote2 192.168.0.102Remote3 It is made as [ manage / 192.168.0.103 ]. And when a remote side is connected the local side, remote-side operation information etc. can be transmitted to the notebook computer PCi by the side of a local by exchanging such participant information mutually between Communicator 3A and 3B. For example, Communicator 3A is controlled to display User Information of notebook computer PC1 belonging to a Room.No No. 323 room on notebook computer PC2 belonging to a Room.No No. 101 room. The participant in a Room.No No. 323 room is displayed on the notebook computer PCi of the participant in a Room.No No. 101 room in the form of a user icon, and, specifically, it can be checked.

[0105] Like [ when it does in this way ] the user icon display of notebook computer PC1 (local side participant) of a Room.No No. 323 room belonging to the same teleconference 102 User icon \*\* of notebook computer PC2 (remote side participant) belonging to a Room.No No. 101 room can be dealt with. Therefore, an icon can be operated only by clicking on a user icon and specifying a communication partner, without being conscious of which communicators 3A and 3B he is a participant in (henceforth participant information exchange system).

[0106] Then, the example of participant information exchange in the network type teleconference 102 is explained. In addition, Screen P0 is referred to at the time of GUI

starting shown in drawing 6 .

[0107] Screen P0 is contents displayed on the notebook computer PC1 grade of the participant in the meeting group by the side of a local at the time of GUI starting shown in drawing 6 . The ATENDI screen 23 is displayed on the right-hand side of Screen P0 at the time of this GUI starting. It is made as [ display / on the ATENDI screen 23 / the IP address of the notebook computer PCi of the meeting group by the side of the local which has participated in the teleconference 102 concerned simultaneously, and a remote-side meeting group, a participant's face picture, etc. ]. Local1 which shows the participant in the meeting group by the side of a local in this example, and its IP address (192.168.0.214), Remot1 which shows Remot2 which show the participant in a remote-side meeting group, the IP address (192.168.0.53) of those, and other participants, and its IP address (192.168.0.84) are displayed.

[0108] In this system 102, a local side the information of the participant in remote-side both by participant information exchange between Communicator 3A and 3B For example, since it is manageable with the communicator 3A of the local side, A meeting can be advanced without a participant being conscious of whether it is a local side and whether it is especially a remote side. It is made as [ distinguish / display the character of [Remote] beside the icon of the participant in the local side, and / for convenience, / that it is local ].

[0109] For example, when transmitting a file to remote-side Remote2 from Local1 by the side of a local, packet transfer processing is made as follows. In this example, the IP address of notebook computer PC1 by the side of a local is (192.168.0.101), a transmitting agency is Local1 and a transmission destination is Remot1.

[0110] The IP address of remote-side notebook computer PC2 is (192.168.0.53), for example, a transmitting agency is Local1 and a transmission destination is Remot1. The global address of the communicator 3A of the local side is (43.2.57.33). The remote-side communicator's 3B global address is (43.0.21.121).

[0111] When packets, such as file information, are sent to a remote-side participant (Remote1) from the participant in the local side shown in drawing 9 on the assumption that this (Local1), First, the packet which described the information on a remote-side transmitting destination user name from Local1 (notebook computer PCi by the side of a local) to the communicator 3A of the local side is transmitted. In the communicator 3A of the local side which received this, a transfer header is created from these information. The information on a transmitting agency or a transmission destination is described by the transfer header. Then, the packet which added the transfer header is made as [ transmit / to the remote-side communicator 3B ].

[0112] In the remote-side communicator 3B which received this, a transfer header is decoded and it is made with reference to the IP address of a transmission destination from remote-side participant information as [ transmit / to Remote1 (remote-side notebook computer PCi) of this

IP address / file information etc. ]. In addition, in sending a packet to the local side from a remote side, it becomes this reverse process. In performing the chat to two or more partners, except that the partner of a transmission destination becomes plurality, it becomes the same contents of processing.

[0113] Such a series of operations of a file transfer are performed on the GUI operation screen P2 of drawing 6 by drags and drops the icon of a file to transmit to the user icon of the partner who wants to transmit a file. Moreover, if the user icon of the partner who wants to perform a chat is clicked on it and chosen about a chat and the button of [CHAT] is clicked, it will be made as [ transmit / only to the partner / the message of a chat ]. Since it realizes by the completely same operation, without the partner of the destination being conscious of whether it is a local side and whether it is a remote side, it is very easy to use the operation which chooses these partners for a user.

[0114] Thus, according to the teleconference 102 concerning the 2nd work example concerning this invention, it is made as [ exchange / between network system #1 and #2 / with both the communicators 3A and 3B / User Information ].

[0115] Without being completely conscious of a complicated setup on a network Therefore, notebook computer PC1 of a Room.No No. 323 room (local side participant), A chat, a file, etc. can be directly transmitted among notebook computer PC2 (remote side participant) belonging to a Room.No No. 101 room etc. Communication processing between local/remotes can be realized by the same operation as the communication processing between locals, without making a user conscious of it being communication between remote places with this. And since the completely same procedure as the case where the partner of the destination is a local side realizes, it is very easy to use operation in the GUI screen on Client PC for a user.

[0116] According to the participant information exchange system concerning this teleconference 102, not only in between network system #1 and network system #2 private in a local area -- communication processing can be easily performed among notebook computer PCi(s) which are using IP. Thus, participant information exchange system is very effective.

[0117] (4) The 3rd work-example drawing 10 is the image figure showing the example of composition of the remote teleconference 103 as the 3rd work example concerning this invention. In this work example, apply a network information processing system between the conference rooms of a remote place, and between this remote place A leased circuit Or the remote teleconference 103 is constituted using a dial-up line or/and a communication network, and the registration equipment information used as an example of the initial entry about the electronic equipment for network configuration is mutually exchanged in between each network information processing systems.

[0118] The remote teleconference 103 shown in drawing 10 applies a network information processing system to a remote place like the conference room in Tokyo, and the conference

room in Kanagawa Prefecture. Projector 2A, Communicator 3A, and an access point 6 are arranged in the conference room (system #1) in Tokyo, and it connects with the means of communications 40A through the communication modem which Communicator 3A and teleconference equipment 7 do not illustrate in system #1 (external connection is possible). Projector 2A is connected to Communicator 3A. Three notebook computers PCi (i= 1-3) equipped with the wireless LAN function which can communicate via the access point 6 are prepared for this conference room.

[0119] Projector 2B and the communicator 3B with a wireless LAN function are stationed in the conference room (system #2) in Kanagawa, and it connects with the means of communications 40B through the communication modem which Communicator 3B and teleconference equipment 7 do not illustrate in system #2. Three notebook computers PCi (i= 1-3) equipped with the wireless LAN function are prepared for this conference room. At this example, it is Peer about Communicator 3B. The case where ToPeer mode carries out a wireless LAN setup is shown. In this example, communication is performed on Cable LAN via Communicators 3A and 3B by setting up ICS (Internet Connection Sharing).

[0120] The conference room in above-mentioned Tokyo and the conference room in Kanagawa Prefecture are connected using a leased circuit or a dial-up line, or/and a communication network. Communicators 3A and 3B have equipped the LAN adapter of a cable or/and radio. In addition, since the thing of the same name as the 1st and 2nd work examples and the same sign has the same function, it omits the explanation.

[0121] In this work example, it is made in the remote teleconference 103 as [ exchange / the initial entry about the electronic equipment for network configuration / the communicator 3A of system #1 and the communicator 3B of system #2 / mutually ]. For example, Communicators 3A and 3B share the initial entry about electronic equipment by inter exchange communication between system #1 and #2, and it is made as [ provide / with the initial entry of the electronic equipment concerned / a user ]. If it does in this way, or the initial entry of the electronic equipment of other network information processing systems will be acquired, automatic connection application can be started using the initial entry.

[0122] Communicators 3A and 3B are made by this system 103 as [ manage / the initial entry about the electronic equipment belonging to the same network information processing system ]. It is for using the electronic equipment for network configuration using at any time. So, in a notebook computer PCi, it is made as [ specify / using the alter operation function / the IP address (intrinsic identification information) of the electronic equipment of a connection destination ]. It is for notifying the other party of use of electronic equipment clearly.

[0123] Communicators 3A and 3B own jointly between this system 103 User Information acquired by inter exchange communication between network information processing systems. It controls to display User Information of the notebook computer PCi belonging to the network

information processing system of another side on the notebook computer PCi belonging to one network information processing system. If it does in this way, communication with the user of a remote site (connection destination) can be performed like a meeting participant.

[0124] The electronic equipment for network configuration is made by this system 103 as [ register / with Communicators 3A and 3B / a device name and/or the information about connection ]. By this registration, the participant concerning the teleconference 103 concerned can extend electronic equipment required for network configuration easily.

[0125] The application which exchanges information with Communicators 3A and 3B uniquely by this system 103 is incorporated. The IP address of a connection destination is received at the time of network information processing system remote attachment, and it is made as [ acquire / based on this IP address / the name and/or initial entry (registration equipment information) of electronic equipment ].

[0126] Drawing 11 is the image figure showing the display example of the GUI connection-confirm screen P4. The GUI connection-confirm screen P4 shown in drawing 11 is a screen for remote attachment operation it is [ a screen ] open from Screen P0 at the time of GUI starting of a notebook computer PCi. The connection destination display area 26 which displays the name of a connection destination and its IP address is established in this GUI connection-confirm screen P4. While RoomC is displayed on the name "Name" of a connection destination, 192.168.100.100 is displayed as the IP address. This display is made as [ search / by a scroll key K13 and K14 / it / in a top or a lower part ].

[0127] The connection destination input area 27 is formed down the connection destination display area 26, and it is made as [ input / the name of a connection destination ]. The IP address input area 28 is formed down the connection destination input area 27, and it is made as [ input / the IP address of a connection destination ].

[0128] The IP address of the communicator 3B of a connection destination is inputted into this area 28. And it is made as [ click / the "Connect" button K11 prepared down the IP address input area 28 ]. In addition, the GUI connection-confirm screen P4 is closed by clicking the "Close" button K12. The "add" button K15 is used at the time of IP address search.

[0129] Then, it explains by dividing into the user processing by the side of the local/remote from construction of the remote teleconference 103 to communication implementation, and processing of Communicator 3A. Drawing 12 - drawing 15 are flow charts which show respectively the example of processing in the remote teleconference 103.

[0130] It is premised on the case where connect the electronic equipment for two or more network configuration on the same network, and information is processed, in this work example. In this example, a device to connect to the same network in teleconferencing is made as [ register / beforehand / on the configuration screen at the time of installation of the main communicators 3A and 3B / ID (an IP address and telephone number) required for a device

name and connection ].

[0131] Registration devices are the vice-communicators 3C and 3D, and a creator 5 and teleconference equipment 7 grade. The equipment which does not manage a meeting participant's information etc. is contained in the vice-communicators 3C and 3D. Each initial entry of the vice-communicators 3C and 3D and a creator 5 is made as [ identify / by an IP address ]. The initial entry of teleconference equipment 7 is made as [ identify / by the IP address or ISDN, the telephone number, etc. ]. Thus, it becomes sharable [ registration equipment information ] by registering the identification information at the time of a connection device and connection. In this example, it is premised on the case where the registration equipment information (initial entry) about electronic equipment is exchanged mutually, in between system #1 shown in drawing 10 , and #2.

[0132] [User processing by the side of a local] Drawing 12 is a flow chart which shows the example of processing in a notebook computer PCi (local side). In the user of the local side, a connection request is transmitted at Step B1 of a flow chart which operates a notebook computer PCi and is first shown in drawing 12 . At this time, a user displays the GUI connection-confirm screen P4 which operated Screen P0 at the time of GUI starting of a notebook computer PCi, and was shown in drawing 11 . And the IP address of the communicator 3B of a connection destination is inputted into the area 28 of the "IP address" of the GUI connection-confirm screen P4, and the "Connect" button K11 is clicked.

[0133] Then, with a notebook computer PCi, it waits for the connection result reception from Communicator 3A by step B-2. Control is branched at Step B3 by the connection result from Communicator 3A. In a connection success, it shifts to step B4. When a line connection goes wrong, Communicator 3A is made as [ notify / to a notebook computer PCi / connection failure ].

[0134] In connection failure, it shifts to Step B9, and it performs error processing. In error processing, it is displayed on the liquid crystal display section of a notebook computer PCi etc. in order to make "connection failure" recognize, and the user can check this. Then, it decides whether shift to Step B10 and retry it. The determination of a retry is made by the user and a notebook computer PCi operates based on this determination. When not retrying, network information processing is ended.

[0135] Shifting to step B4 in a line connection success, a notebook computer PCi transmits registration equipment information to Communicator 3A. At this time, registration equipment information is transmitted to Communicator 3A, and with this registration initial entry, the IP address of main communicator 3A itself is attached, and it is transmitted to the communicator 3B of system #2.

[0136] The structure of the transmit data at this time is as an outline and follows. They are data streams, such as the main communicator's 3A IP address + registration equipment information



(the = device 1, device 2 ... device n). The data structure of each device is device x= (the identification information 1, identification information 2 ... identification information). For example, it is teleconference equipment 7 (an IP address, ISDN, telephone number) etc. [0137] After transmission of this registration equipment information, with a notebook computer PCi, it shifts to step B5 and the notice of the completion of connection is received from Communicator 3A. And it shifts to step B6 and communicates with the intramodule of system #1 in a notebook computer PCi. It is for reporting that the circuit was connected with system #2.

[0138] For example, in intramodule, the information on a connection destination is acquired by one method of the degrees. Since registration equipment information, such as an initial entry, is held at Communicator 3A etc., it is made as [ acquire / an application program interface (API) / call in a notebook computer PCi and ].

[0139] With Communicator's 3A administrative module, participant information performs connection processing within system #1 uniquely using an IP address, and is made as [ exchange / mutual information / mutually ]. In addition, although some electronic equipment for network configuration needs processing complicated at the time of connection, and special information, it connects uniquely by the same method and can be coped with by communicating each other in information.

[0140] The Data Processing Division which remote teleconference environment was built at Step B7, used the mouse after that by this, and uses both projectors 2A, 2B, etc. is made. Then, it is judged whether it shifts to Step B8 and the remote teleconference concerned is ended. A user opts for the end of a meeting. In the notebook computer PCi concerned, by the depression of the ESC key, it carries out "ending a meeting" and network information processing is ended.

[0141] [Processing in a communicator] Drawing 13 is a flow chart which shows the example of processing in Communicator (main) 3A.

[0142] In Communicator 3A, the connection request from a notebook computer PCi is stood by at Step C1 of a flow chart shown in drawing 13 . When there is a connection request, it shifts to Step C2 and line connection processing is performed. At this time, the line connection processing by TCP socket communication is started by Communicator 3A. If a line connection is started, by Communicator 3A, it will be made using TCP/socket communication as [ make / connection with the IP address inputted into the GUI connection-confirm screen P4 ]. This IP address is the communicator 3B of system #2.

[0143] Then, it shifts to Step C3 and the notice of a connection result is transmitted to a notebook computer PCi. Then, it is made as [ support / shift to Step C4 and / the Data Processing Division in concerned system #1 and #2 ]. A transfer of a file, transmission of User Information, etc. are supported. And at Step C5, it is distinguished whether the Data

Processing Division support is ended by whether it is the end of a meeting. Whether it is the end of a meeting receives a notice from a user's notebook computer PCi.

[0144] [Remote-side user processing] Drawing 14 is a flow chart which shows the example of processing in a notebook computer PCi (remote side).

[0145] In a remote-side user, it waits for the connection request by the side of a local at Step E1 of a flow chart which operates a notebook computer PCi and is shown in drawing 14 .

Reception of this connection request will determine [ which shifts to Step E2 and receives to the connection request concerned / or or ] whether to refuse. It is the check of a connection intention to the user of system #1 here. That is, if the registration equipment information from system #1 is received, it is necessary to notify the check of a connection intention that there was a connection request to the user of system #1.

[0146] The conference room which is not meant and while this is unconscious, it is taking into consideration the security top connection is made and keep conference information from revealing. This acceptance or refusal is determined by the remote-side user, and it is made as [ branch / control ] with a notebook computer PCi according to this determination.

[0147] When receiving a connection request, it shifts to Step E3 and registration equipment information is transmitted through the communicator 3A of system #1. It is the same as that of the transmission content of the registration equipment information by Communicator 3A previously explained about the reply of registration equipment information almost. Shifting to Step E4 after the reply of the registration equipment information, the notebook computer PCi of system #2 receives the notice of the completion of connection through Communicator 3B from Communicator 3A.

[0148] And it shifts to Step E5 and communicates with the intramodule of system #2 in a notebook computer PCi. It is for reporting that the circuit was connected with system #1. The Data Processing Division which remote teleconference environment was built at Step E6, used the mouse after that by this, and uses both projectors 2A, 2B, etc. is made.

[0149] Then, it is judged whether it shifts to Step E7 and the remote teleconference concerned is ended. A user opts for the end of a meeting. In the notebook computer PCi concerned, by the depression of the ESC key, it carries out "ending a meeting" and network information processing is ended. In addition, in connection-request refusal at Step E3, it shifts to Step E8, and it is made as [ transmit / the notice of connection-request refusal ]. Then, network information processing is ended.

[0150] Thus, according to the remote teleconference 103 concerning the 3rd work example concerning this invention, Communicators 3A and 3B are made in between system #1 and #2 as [ exchange / the registration equipment information about the electronic equipment for network configuration / mutually ].

[0151] Therefore, without being completely conscious of a complicated setup on a network

[ only specifying the IP address of a connection destination ] The contents of electronic intelligence created by two or more system #1, the communicator 3B belonging to #2 grade, the notebook computer PCi, the creator 5, and teleconference equipment 7 and the creator 5 concerned are sharable. And since remote teleconference environment can be built easily, a meeting etc. can be easily held between remote places. Moreover, the user only knows the IP address of the communicator 3B of a connection destination conference room, and can acquire all the information on the device for a network meeting currently installed in the connection destination conference room.

[0152] (5) The 4th work-example drawing 15 is the image figure showing the example of composition of the teleconference 104 two or more network type [ as the 4th work example concerning this invention ]. Drawing 16 A and B is the image figures showing the display example of the icon for display devices. In this work example, the display device of type corresponding to a network is prepared. This display device mounts a communicator function in a projector. It is the case where between network systems is connected by means of communications in this example, and is made to perform simultaneous display control with the display device of type corresponding to a network based on the alter operation by a notebook computer PCi. While enabling it to display simultaneously the same contents of electronic intelligence as two or more display devices by one alter operation of a notebook computer PCi, the user who participated in concerned network system #1 and #3 enables it to view and listen to the picture same all at once.

[0153] [ the two or more network type teleconference 104 shown in drawing 15 ] It has the means of communications 40 which connects between [ of two ] network system #1, #2, and these network system #1 and #2. Five notebook computers PCi (i= 1-5) which have an alter operation function in network system #1 and #2, and process arbitrary information. It is constituted including five sets of the display devices PJj (j= 1-5) of type corresponding to a network which offer the contents of electronic intelligence which process at least the information transmitted from a notebook computer PCi, and include display information. The connection method to the network of the display device PJj and the notebook computer PCi for operation (terminal unit) may not ask a cable or radio, but each system #1 and #2 may exist in the physically distant place.

[0154] The display device PJj is an example of an information service management tool, and is made as [ perform / based on the alter operation by a notebook computer PCi / simultaneous display control ]. The display device PJj has the projector function which displays an image based on the information transmitted from a notebook computer PCi, and the communicator function which supports electronic intelligence processing based on alter operation from a notebook computer PCi.

[0155] It is the case where five sets of the display devices PJ1-PJ5 are connected to network

system #1 and #2 by this system 104, and is made in the display device PJj as [ carry out / grouping of the display device PJj chosen based on the alter operation from a notebook computer PCi ]. In this example, the display device PJj which the notebook computer PCi accessed first serves as a master, and it is made as [ acquire / the right of main control ]. For example, display-device PJ1 which acquired the right of main control is controlled to carry out grouping of three sets of the display devices PJ1-PJ3 connected to network system #1 including the self-opportunity, and to carry out grouping of two-set PJ[ of display devices ]4 connected to network system #2, and PJ5.

[0156] It is made as [ distribute / the same contents of a display / to two or more display devices PJj which the notebook computer PCi accessed first by this system 104 and by which grouping was carried out by display-device PJ1, for example / all at once ]. Thereby, the picture of three sets of the display devices PJ1-PJ3 by which grouping was carried out beforehand, and the contents of electronic intelligence same all at once as two-set PJ[ of display devices ]4 and PJ5 can be displayed.

[0157] The control screen P1 shown in drawing 16 A is displayed on the left-hand side of Screen P0 at the time of GUI starting explained by drawing 6 . This control screen P1 is displayed based on predetermined application, and the icon of three sets of the display devices PJ1-PJ3 is displayed on the area 21 for the device icons of this screen P1, for example. That is, a notebook computer PCi recognizes automatically the display devices PJ1-PJ3 connected into the same network, and displays them on the control screen P1.

[0158] The contents displayed at this time are a name, an IP address, etc. which identify the icon of the display device PJj, and the display device PJj concerned. A user is this control screen P1, and chooses the display device PJj on which he wants to display presentation data. When choosing the display device PJj, the icon which imagined the display device is performed by carrying out a mouse click.

[0159] If the display device PJj is chosen here, the color of the icon will change. The icon of the slash shows change of this color display-device PJ1 which is shown in drawing 16 A and which shows the icon of the white of display-device PJ1 and PJ2 to drawing 16 B, for example, and PJ2. When this selection process is called the grouping of the electronic equipment for network configuration and two or more display devices PJj are chosen, the same contents as all the display-devices PJ1 - PJ3 grade can be displayed by performing display operation to one display-device icon.

[0160] Then, the example of selection of the icon for display devices is explained. Drawing 17 is a flow chart which shows the example of selection of a display-device icon.

[0161] It is premised on the case where connect five sets of five sets of notebook computers PCi (i= 1-5), and the display devices PJj (j= 1-5) on network system #1 and #2, and information is processed, in this work example. Network system #1 and #2 are connected by the means of

communications 40. In the display device PJj, it is made as [ perform / based on the alter operation by a notebook computer PCi / simultaneous display control ]. In a notebook computer PCi, the display device PJj in a network is detected and the icon for display devices is displayed on the control screen P1. By this automatic detection function, it is made as [ identify / the display device PJj in which the use in a network is possible ].

[0162] This is made into a processing condition and the mouse operation to an icon is supervised in a notebook computer PCi at Step F1 of a flow chart shown in drawing 17 . If data are dragged and dropped to that [ icon (display device) ] by a user's mouse operation at Step F2, it will shift to Step F3 and the data concerned will confirm whether to be an effective file format. At this time, it is made by the file check as [ identify / by the extension of a file name ].

[0163] Then, control branches by the file which can be expressed as Step F4, and the file which cannot be displayed. If the file is effective, the display which shifts to Step F5 and relates to the file in display-device PJ1 and PJ2 grade all at once will be performed. If file format is invalid, it will return to the surveillance of the icon of Step F1.

[0164] At this time, with checking the selective state of an icon, the IP address of the display device PJj is acquired and a display instruction is transmitted from a notebook computer PCi. A display control will be ended if a display in display-device PJ1 of a selective state and PJ2 grade is ended at Step F6. When not having ended, it returns to Step F5 and display processing is continued. It is because the case where the display of the file is required again is assumed.

[0165] In addition, in this example, it is made as [ carry out / at Step F7 - Step F11 / the grouping of the electronic equipment for network configuration ]. For example, if it clicks on an icon (display device) at Step F7, the selective state of the present icon will be checked. For example, if the icon for display devices is a selective state at Step F8, it will shift to Step F10 and the icon will be changed into a non selection state.

[0166] If an icon is in a non selection state at Step F9, it will shift to Step F11 and the icon will be made into a selective state. When are carried out like this and an icon will be in a selective state, the color of the icon for display devices shown in drawing 16 A can be changed. If two or more icons are selective states, it will mean that grouping of display-device PJ1 belonging to the selected icon and the PJ2 grade was carried out.

[0167] Thus, [ according to the network information processing system as the 4th work example concerning this invention ] It is the case where between network system #1 and #2 is connected by the means of communications 40, and is made as [ perform / with the display device PJj which acquired the right of main control first accessed based on the alter operation by a notebook computer PCi / simultaneous display control ].

[0168] Therefore, the same contents of electronic intelligence can be simultaneously displayed on two or more display devices PJj by one alter operation of a notebook computer PCi.

Thereby, the user who participated in concerned network system #1 and #2 can view and listen to the picture same all at once.

[0169] (6) The 5th work-example drawing 18 A and B is the image figure showing the example of transparent window control as the 5th work example concerning this invention. In addition, the block diagram of the network type teleconference 102 shown in drawing 8 is referred to again. It is the case where the directions pointer based on the mouse alter operation from a notebook computer PCi is displayed on Projector 2A etc. in this work example. It is made as [ display / with the projection image of the liquid crystal display section of a notebook computer PCi, or Projector 2A / the transparent window W for controlling operation by a directions pointer ].

[0170] The transparent window screen W shown in drawing 18 A is displayed before file transfer starting. For example, it is applied to the teleconference 102 which was explained by drawing 8 . The transparent window W is displayed on the front of the portion of Application (picture) AP, or the whole screen which wants to control operation by the directions pointer Mp in this example.

[0171] The directions pointer (event of a mouse) Mp is taken in the transparent window W (obstructed), and stops arriving to Application AP. By doing in this way, the alter operation by the directions pointer Mp can be controlled to the picture displayed on the back from transparent window W, without affecting a screen display.

[0172] It is made as [ display / by this system 102 / on the front of the transparent window W which shows the transparent window W while on display at drawing 18 B / application (picture) AP1 ]. If it does in this way, alter operation by the directions pointer Mp of only specific application Ap1 can be performed. In addition, since application Ap2 shown in drawing 18 B are displayed behind the transparent window W, as shown in drawing 18 A, the alter operation by the directions pointer Mp is controlled to application (picture) AP2.

[0173] Moreover, in the system 102 concerned, directions pointer Mp is the case where the picture to depend and in which alter operation is possible is displayed, in the communicators 3A and 3B of system #1 and #2, and the Information Transfer Sub-Division demand is transmitted to Communicator 3A from a notebook computer PCi one network system #1. Communicator 3A transmits the notice of the Information Transfer Sub-Division demand receptionist to the communicator 3A of network system #2 of another side.

[0174] When the transparent window W is displayed with the communicators 3A and 3B of network system #1 of both sides, and #2 and the notebook computer PCi concerned receives the notice of information start completion from both communicators 3A and 3B with this, it is made as [ eliminate / the transparent window W ].

[0175] Then, the example of control of the transparent window W in teleconference 102 grade is explained. Drawing 19 is the transition diagram showing the example of transparent window

control at the time of the file transfer in teleconference 102 grade.

[0176] In this work example, [ the conference room (system #1) of Room.No323 (henceforth Room323) ] The communicator 3A which connected the notebook computer PCi of 7 or 3 teleconference equipment (i= 1-3) and Projector 2A is prepared. Also to the conference room (system #2) of Room.No101 (henceforth Room101), the notebook computer PCi (i= 1-3) of 7 or 3 teleconference equipment, The communicator 3B which connected projector 2B is prepared, and between Room323 and Room101 is connected by the means of communications (network) 40.

[0177] This example displays the file on the notebook computer (only henceforth Client PCi) of the client of Room323 on the both sides of Room323 and Room101, and assumes the case where a presentation is performed. Communicators' 3A and 3B specification presupposes that it is the same.

[0178] These are made into a processing condition and the transfer start request of the file for using it for a presentation from Client PCi to the communicator 3A of one's conference room (Room323) at Step S1 shown in the transition diagram of drawing 19 is transmitted. The communicator 3A which received this transfer start request transmits the notice of a purport which received the transfer request at Step S2 to the communicator 3B of the conference room (Room101) of the other party. At this time, the transparent window W is displayed for the liquid crystal display section of a notebook computer PCi, Projector 2A, and the whole screen of 2B with a wrap form at Step S3 at each communicator 3A.

[0179] It shifts to Step S4 in the stage which these displays finished, and a file transfer is started from Client PCi. Application AP is started at Step S5 after file transfer completion. At this time, it is made to perform starting at the back of the transparent window W. Although the display of application is in sight by doing in this way, Application AP changes into the state where it cannot be operated with a mouse 8 until the transparent window W disappears (refer to drawing 18 A). A file is similarly transmitted at Step S6 about the conference room of a remote side, and it starts at Step S7.

[0180] If starting is completed, the notice of start completion will be transmitted to the other party at Step S8 and Step S9, respectively, and it is made as [ eliminate / shift to Step S10 in the stage to which both notices were equal, and / the transparent window W ].

[0181] In addition, control whose mouse operation is made improper can be performed until it returns the notice of Step S8 and Step S9 to a client side and both notices gather, in calling it only one application which starts. However, it cannot be said that this method is controlled been mouse operation of the application AP1 which started Communicator 3A etc. previously made to carry out until starting of both sides finishes only the mouse operation to application AP2 under present starting.

[0182] [ then, the thing for which the display position of the transparent window W will be

shifted on the reverse side of application AP1 to carry out mouse operation as shown in drawing 18 B if it is the method of using the transparent window W mentioned above ] Only the mouse operation to application AP2 which want to control mouse operation can be controlled now.

[0183] In an above-mentioned example, after application starting can transmit the mouse operation of Room323 to the communicator 3B of Room101, and can synchronize a display action by being made to operate application with each notebook computer PCi simultaneously.

[0184] Thus, [ according to the teleconference 102 concerning the 5th work example concerning this invention ] The mouse alter operation to the application AP etc. can be controlled until the state of the application AP which started newly gathers between remote places, without barring the mouse operation to a screen on display, other applications AP, etc. Even if after application starting does not transmit a file, it can arrange operation of both sides by transmitting a command to application.

[0185] (7) The 6th work-example drawing 20 is the image figure showing the example of composition of the remote teleconference 106 as the 6th work example concerning this invention. Although the creator 5 and the teleconference equipment 7 grade are omitted compared with the remote teleconference 103 shown in drawing 10 in this work example, of course, the electronic equipment for such network configuration may be connected, and a system 106 may be constituted. In this example, display synchronous remote control of Communicator 3A or the 3B is carried out based on the alter operation by a notebook computer PCi. While enabling it to display the contents of electronic intelligence synchronously between remote places, without being completely conscious of a complicated setup on a network, it enables it to view and listen to the contents of electronic intelligence shared between two or more network system #1 and #2 grade simultaneously. In addition, since the thing of the same name as the 3rd work example and the same sign has the same function, it omits the explanation.

[0186] In the remote teleconference 106 shown in drawing 20 , it is made as [ carry out / based on the alter operation by the notebook computer PCi of system (conference room in Tokyo) #1 / display synchronous remote control of the communicators 3A and 3B ]. Projector 2A is connected to Communicator 3A through a RGB cable, and projector 2B is connected also to the communicator 3B of system (conference room in Kanagawa) #2 through a RGB cable. It is made as [ carry out / via a network / like the 1st - the 5th work example / from the application of a user's notebook computer PCi / alter operation of the communicator 3A ].

[0187] In this display synchronous remote control, when starting teleconferencing, it is made as [ output / from a notebook computer PCi / to Communicator 3A / the control information which shows "all the image information present on display being closed" or "new information



being transmitted and the contents of electronic intelligence being displayed" ]. By closing all the files present on display, the confidentiality of the conference information by the side of a local (presentation information) can be raised.

[0188] Moreover, a file present on display can be transmitted and displayed on a connection destination, and the contents of a meeting by the side of a local can be harnessed in teleconferencing by uniting display order. For example, when "a file is transmitted mutually, it is and it takes a synchronization", teleconferencing can be positioned on extension of the meeting by the side of a local, and sharing of the contents of a meeting can be aimed at by teleconferencing. [ present on display ]

[0189] In this example, the communicator 3A first accessed from a notebook computer PCi acquires the right of main control after device connection. He is the main communicator 3A etc. Display synchronous remote control is performed based on the alter operation by the notebook computer PCi. It is made as [ transmit / using the alter operation function of this notebook computer PCi / to the communicator 3B of a connection destination / control information ]. It is for taking the synchronization of the display screen in system #1 of both sides, and #2.

[0190] In this example, the intramodule which receives the notice of completion of remote attachment is prepared in Communicator 3A. In this intramodule, when a notice is received, or it closes all files, such as Projector 2A and 2B, the display order of the file which carried out the file transfer, opened the file with that completion of a transfer, and was opened here is united. What is necessary is just to prepare application with such a function in Communicator 3A and 3B.

[0191] Then, the example of display synchronous remote control in the remote teleconference 106 is explained. Drawing 21 A and B is the projector 2A in system #1 and #2, and the image figure showing the display example of 2B. Drawing 22 is a flow chart which shows the example of display synchronous remote control in the remote teleconference 106.

[0192] Since the communicator 3 has not received the file to the projector 2A of the conference room (system #1) in Tokyo shown in drawing 21 A in this work example, it is in the state where no displays are made. [ projector 2B of the conference room (system #2) in Kanagawa shown in drawing 21 B ] on the other hand It is in the state where the presentation has already been performed, Communicator 3B has received three file File1, File2, and File3, and three file File1, File2, and File3 are displayed on projector 2B based on this.

[0193] Thus, the contents of electronic intelligence which it is going to display on Projector 2A and 2B with Communicators 3A and 3B in the mutual conference room differ. Although all the presentation files must be closed with Communicator 3B in this example, it does not make for a file not to exist by system #1 into a processing condition.

[0194] In such a situation, a connection request is displayed on the screen which Communicator 3A displays by the conference room (system #1) in Tokyo from the conference

room (system #2) in Kanagawa, and the case where to receive connection is decided is assumed in the conference room in the Tokyo.

[0195] This is made into a processing condition and it waits for the mouse operation information on whether display synchronous remote control, such as Projector 2A and 2B, is performed at Step G1. Mouse operation information is transmitted to Communicator 3A from the notebook computer PCi of system #1.

[0196] In Communicator 3A, mouse operation information is received and display synchronous remote control is carried out. In this case, it is confirmed whether it shifts to Step G2 and there is any image present on display.

[0197] When there is an image present on display, it shifts to Step G3 and the communicator 3B of system #2 is notified of the control information on the purport "all the files present on display are closed." If all the files are closed, namely, Communicator's 3B background is displayed on projector 2B at this time, a synchronization can be taken inevitably. In the example of drawing 21 B, File1-File3 which are displayed on the conference room in Kanagawa are closed. This is because the contents of the meeting in system #2 are not revealed to the conference room of system #1 by the start of teleconferencing (i.e., in order to maintain the security of conference information).

[0198] Then, it returns to Step G2 and it is confirmed again whether there is any image present on display. Shortly, since there is no image present on display, it shifts to Step G4 and a new file is transmitted to the communicator 3A of system #1, and the communicator 3B of system #2 from the notebook computer PCi of system #1. After a line connection applies information \*\*\*\*\* explained in the 3rd work example, and is made as [ display / the file currently displayed on Projector 2A and 2B with the mutual communicators 3A and 3B / on the other party / transmit and ].

[0199] It is made as [ display / the image which starts by this the same presentation data as the projector 2A connected to Communicator 3A, and projector 2B connected to Communicator 3B / synchronously ]. In the example of drawing 21 A and B, File1-File3 which are displayed by system #2 are transmitted to the conference room of system #1, and it is made as [ display / on Projector 2A / through the communicator 3A of the conference room concerned ].

[0200] Moreover, preparation and discussion of a presentation etc. are performed at the meeting of system #2, and it becomes an effective means, when holding teleconferencing in order to aim at sharing of information. However, since the transfer time will start if a file is large, the device on employment of data compression etc. is needed. Then, it is judged whether it shifts to Step G5 and teleconferencing is ended. The judgment in this case is a user. Network information processing is ended by the end of teleconferencing. It is made as [ listen / simultaneously / return to Step G4 by continuation of teleconferencing, transmit the following

new file, and / to the contents of electronic intelligence / view and ].

[0201] Thus, according to the remote teleconference 106 concerning the 6th work example concerning this invention, it is made as [ carry out / based on the alter operation by the notebook computer PCi of system #1 grade / display synchronous remote control of the communicators 3A and 3B of system #1 and #2 ]. Therefore, the contents of a display can be synchronized between remote places, without being completely conscious of a complicated setup on a network. Thereby, it can view and listen to the contents of electronic intelligence shared between two or more network information processing systems simultaneously.

[0202] (8) The 7th work-example drawing 23 is the property figure showing the example of data transfer in the teleconference 101 as the 7th work example concerning this invention. In addition, the block diagram of the teleconference 101 concerning the 1st work example is referred to again. the notebook computer PCi (i= 1-3) as shown in drawing 3 in this work example -- and Network system #1 constituted including Projectors 2A and 2C, the Lord / vice-communicators 3A and 3C, a creator 5, and teleconference equipment 7, Network system #2 constituted including a notebook computer PCi (i= 1, 2) and projector 2B, 2D, the Lord / vice-communicators 3B and 3D, a creator 5, and teleconference equipment 7 are connected by the means of communications 40.

[0203] And while notifying processing status information from the main communicator 3A to each notebook computer PCi The information transfer rate corresponding to processing status information is controlled by the notebook computer PCi concerned. When operating the main communicators 3A and 3B etc. by remote control, while enabling it to maintain the speed of response of input interfaces, such as a mouse in a notebook computer PCi, at high speed, it enables it to build the good teleconference 101 grade of operability.

[0204] In the teleconference 101 as shown in drawing 3 , the main communicator 3A is made with the notebook computer PCi concerned as [ perform / Information Transfer Sub-Division velocity control corresponding to processing status information ] while he notifies processing status information to each notebook computer PCi.

[0205] According to this teleconference 101, the notebook computer PCi of the client of system #1 transmits a file to other notebook computers PCi in the same conference room, and is made as [ realize / the file transfer function between users ]. Moreover, a notebook computer PCi transmits a file to the main communicator 3A. And according to the system 101 concerned, the next processing is carried out.

[0206] \*\* Display a file on the projector 2A connected to the main communicator 3A. The main communicator 3A re-transmits a file also to the main communicator 3B of other conference rooms in that case, and it is made as [ display / the same presentation data as projector 2B connected to the main communicator 3B ].

[0207] \*\* Re-transmit to the vice-communicator 3C further by system #1 from there, and make

it display on the projector 3C connected to the vice-communicator 3C. The main communicator 3A re-transmits a file also to the vice-communicator 3D of other conference rooms in that case, and it is made as [ display / by the projector 2D connected to the vice-communicator 3D / the same presentation data ]. Thereby, the image of the same contents of electronic intelligence can be seen in both conference rooms.

[0208] \*\* others -- re-transmit to the main communicator 3B of a conference room, transmit the notebook computer PCi file in a conference room from the main communicator 3B there, and realize the file transfer function between the users beyond a conference room.

[0209] Moreover, it is made as [ send / to the main communicator 3A / system #1 / with the notebook computer PCi of a client / the information on a remote mouse (virtual mouse for operating the main communicator 3A) ]. In this example, it is made as [ communicate / in consideration of the following ].

[0210] \*\* Since wireless LAN is used for the traffic volume of the local network in a conference room, and this local network, a band becomes narrow in many cases.

[0211] \*\* Since the file transfer to other conference rooms or the vice-communicator 3C is performed through the main communicator 3A about the main communicator's 3A load, a load concentrates on the main communicator 3A.

[0212] Therefore, it is related with the Information Transfer Sub-Division velocity control in the notebook computer PCi dealt with by this teleconference 101. When there are many amounts of Data Processing Division in the main communicator 3A, the transfer rate of the information from a notebook computer PCi to the communicator 3A concerned is lowered, and it is made as [ raise / when there are few amounts of Data Processing Division in the main communicator 3A / a transfer rate ].

[0213] In drawing 23 , a vertical axis is a transfer rate and a horizontal axis is the number of files about Data Processing Division of the main communicator 3A. For example, the transfer rate property applied to transfer rate control with the quadratic curve property of having the inclination-to-the-right slant shown in drawing 23 is given. This transfer rate is determined by the function value of a quadratic curve. The number of files which the main communicator 3A processes is described by the processing list.

[0214] In the main communicator 3A, the current line of a self-opportunity notifies processing status information about the Data Processing Division to require to all the notebook computers PCi in system (same meeting group) #1 (simultaneous distribution). In a notebook computer PCi, it is for adjusting the transfer rate of the information to the communicator 3A concerned. Processing status information is processing which the self-opportunity is performing, and is the contents of "the number of files under present reception being some", and "the number of files under present transmission being some" here.

[0215] change produces the main communicator 3A in the Data Processing Division situation

by this system 101 (/\*\*\*\*\* to which a new demand came is completed) -- every -- it is made as [ transmit / to each notebook computer PCi / processing status information ]. It is, when the number of files which this main communicator 3A processes is described by the processing list. In a notebook computer PCi, when transmitting information to the main communicator 3A, it is made as [ determine / with reference to the processing list transmitted by the main communicator 3A / the transfer rate corresponding to the number of files described by this processing list ].

[0216] When a notebook computer PCi performs remote alter operation (remote mouse operation) in this example, it is made as [ lower / only a fixed quantity / the transfer rate of the information transmitted to the main communicator 3A ]. For example, it has become as a little file transfer rate is lowered while the notebook computer PCi has transmitted the file to the main communicator 3A. If it does in this way, a band is securable for remote mouse control.

[0217] In the main communicator 3A, it is made as [ manage / for every use / the band of the network used with application ]. If it does in this way, the band of the portion about a user interface is securable. By this operation, the response of remote alter operation can be guaranteed and the response performance of a user-interface block can be secured. In addition, when information is not transmitted to the main communicator 3A, above-mentioned Information Transfer Sub-Division velocity control is not performed.

[0218] In this example, it is made as [ send / one piece at a time / from a notebook computer PCi / to the main communicator 3A / a file ]. When the main communicator 3A receives two or more file transfer demands, it is made as [ suspend / the file transfer after the 2nd ].

[0219] Then, the example of data transfer in the teleconference 101 is explained. Drawing 24 is a flow chart which shows the example of processing at the time of the data transfer in a notebook computer PCi. Network system #1 which consists of this example including the notebook computer PCi (i= 1-3) as shown in drawing 3 and Projectors 2A and 2C, the Lord / vice-communicators 3A and 3C, a creator 5, and teleconference equipment 7, Network system #2 constituted including a notebook computer PCi (i= 1, 2) and projector 2B, 2D, the Lord / vice-communicators 3B and 3D, a creator 5, and teleconference equipment 7 are connected by the means of communications 40. And it is premised on the case where the information transfer rate corresponding to processing status information is controlled by the notebook computer PCi concerned while notifying processing status information from the main communicator 3A to each notebook computer PCi.

[0220] This is made into a processing condition and it waits for the transfer request of a file in the notebook computer PCi of a client at Step H1 of a flow chart shown in drawing 24 . A user inputs the transfer request of a file into the notebook computer PCi concerned. In the main communicator 3A, the current line of a self-opportunity carries out simultaneous distribution of "the number of files under present reception is some", "the number of files under present

transmission being some", etc. about the processing to require to all the notebook computers PCi in the conference room of the same group as a self-opportunity. A new demand came, or this information is transmitted to all the notebook computers PCi, whenever \*\*\*\*\* was completed.

[0221] Therefore, when transmitting a file, the processing list which shifted to Step H2 and has been sent by the main communicator 3A in the notebook computer PCi is referred to. And it shifts to Step H3 and the number of processing files of the main communicator 3A in a processing list is searched with a notebook computer PCi. By this search, it is made as [ investigate / the main communicator's 3A load ].

[0222] It is made as [ make / a transfer rate / shift to Step H4 and / when the main communicator's 3A load is heavy (there are many processing files) / low (it lowers) ]. With reference to the quadratic curve property which showed drawing 23 the transfer rate, when the main communicator's 3A number of processing files is X1, a transfer rate is set as Y1. When the number of files is X2, a transfer rate is set as Y2. However, it is  $X2 > X1$  and  $Y1 > Y2$ .

[0223] For example, when a notebook computer PCi performs remote mouse operation and a file is being transmitted to the main communicator 3A, it is made as [ secure / only a fixed quantity lowers the file transfer rate which the self-opportunity itself is performing, and / now / remote mouse control / a band ]. Remote mouse response nature is guaranteed by this operation. The response performance of a user-interface block is secured.

[0224] Moreover, when the main communicator's 3A load is light (there are few processing files), it is made as [ make / a transfer rate / shift to Step H5 and / high (it raises) ]. It is made as [ transmit / shift to Step H6 in the transfer rate adjusted by this, and / a file ].

[0225] Thus, [ according to the teleconference 101 as the 7th work example concerning this invention ] Network system #1 constituted including notebook computers PC1-PC3 and Projectors 2A and 2C, the Lord / vice-communicators 3A and 3C, a creator 5, and teleconference equipment 7, Notebook computer PC1, PC2 and projector 2B, 2D, the Lord / vice-communicators 3B and 3D, While it connects by the means of communications 40 and network system #2 constituted including a creator 5 and teleconference equipment 7 notify processing status information from the main communicator 3A to each notebook computer PCi It is made as [ control / by the notebook computer PCi concerned / the information transfer rate corresponding to processing status information ].

[0226] Therefore, when operating the main communicator 3A of system #1 by remote control, the speed of response of input interfaces, such as a mouse in a notebook computer PCi, can be kept high-speed, and it can communicate in the optimal band. Thereby, guaranteeing the response of a dialog and the good teleconference 101 of operability can be built. And the amount of Information Transfer Sub-Division in network system #1 (traffic) can be controlled, and the system 101 concerned can be operated smoothly.

[0227] Although this work example explained the case where two conference rooms were used, it is not restricted to this. The installed number of a conference room and a remote place, the neighborhood in particular, etc. do not restrict. Although the main communicator 3A and notebook computer PCi in a conference room explained the case where it was connected with a Local radio network, they may be a system which is not restricted to this and uses an access point. Between other devices and with other conference rooms, the network which is using it also except teleconferences, such as intranet, can be used for the means of communications 40.

[0228] Besides a \*\*\*\*, between the main communicator 3A and a notebook computer PCi, it can communicate in the optimal band and, according to the 7th work example, improvement in the using feeling of the teleconference seen from the improvement in a throughput and the user about the main communicator 3A can be aimed at.

[0229] Moreover, communication of a module which influences mouse operation nature was taken into consideration to the maximum extent. Communication of the module which has a margin in the transfer times, such as a user's file transfer, comparatively, without restricting a transfer rate [ with the network busy condition of other modules ] It can be prevented from applying a load to advance of a teleconference, or a user's operation by restricting a band etc. at the time of rush hours.

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